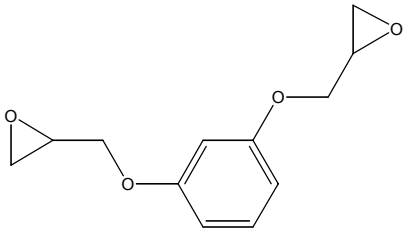
DIGLYCIDYL RESORCINOL ETHER
CAS No. 101-90-6
First Listed in the *Fifth Annual Report on Carcinogens*



CARCINOGENICITY

Diglycidyl resorcinol ether is *reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity in experimental animals (IARC V.36, 1985; NTP 257, 1986). When administered by gavage, the chemical induced squamous cell carcinomas and papillomas of the forestomach in rats and mice of both sexes.

There are no adequate data available to evaluate the carcinogenicity of diglycidyl resorcinol ether in humans (IARC V.36, 1985).

PROPERTIES

Diglycidyl resorcinol ether is a combustible, straw-yellow liquid with a slight phenolic odor. It is miscible with acetone, chloroform, methanol, benzene, and most organic solvents. When heated or exposed to flame, diglycidyl resorcinol ether vapors can explode.

USE

Diglycidyl resorcinol ether is used as a liquid spray epoxy resin and as a reactive diluent in the production of other epoxy resins used in electrical, tooling, adhesive, and laminating applications (IARC V.11, 1976). It is also used as a curing agent in the production of polysulfide rubber and as a coating for metal and certain pavements to increase tensile strength (IARC V.36, 1985; HSDB, 1998).

PRODUCTION

Diglycidyl resorcinol ether is not produced commercially in the United States (HSDB, 1998). The 1998 *Chemical Buyers Directory* and *Chemcyclopedia 98* do not identify any current suppliers of the chemical (Tilton, 1997; Rodnan, 1997). Diglycidyl resorcinol ether had once been produced domestically in commercial quantities by only one company (IARC V.36, 1985; TSCA, 1979). Production levels are considered to be proprietary information, but the 1977 production was estimated to be between 10,000 and 100,000 lb annually by one manufacturer (TSCA, 1979). Before 1977, diglycidyl resorcinol ether was produced by two U.S. firms. It has been produced commercially in the United States since at least 1974 (IARC V.36, 1985). Data on imports and exports were not available.

EXPOSURE

The primary routes of potential human exposure to diglycidyl resorcinol ether are inhalation and dermal contact mainly during its production at a single site. Consumer exposure may occur through the use of epoxy resin products. The National Occupational Hazard Survey, conducted by NIOSH from 1972 to 1974, estimated that 3,106 workers were potentially exposed to diglycidyl resorcinol ether in the workplace (NIOSH, 1976). This estimate was derived from observations of the actual use of the compound (44% of total observations), the use of trade name products known to contain the compound (55%), and the use of generic products suspected of containing the compound (1%). The National Occupational Exposure Survey (1981-1983) indicated that 740 workers were potentially exposed to diglycidyl resorcinol ether (NIOSH, 1984). This estimate was based only on observations of the actual use of the compound.

Total environmental releases from the two facilities reporting diglycidyl resorcinol ether emissions to the U.S. EPA for the year 1996 were 510 lb, given as absolute air release. Total air emissions of 500 lb were given by a facility located in Maple Shade, New Jersey, reporting under Standard Industrial Classification (SIC) Code 2851, paints and allied products (TRI96, 1998).

REGULATIONS

EPA regulates diglycidyl resorcinol ether under the Toxic Substances Control Act (TSCA). The Interagency Testing Committee (ITC) of TSCA has recommended this compound for priority testing. In addition, EPA requires manufacturers and processors to report production, use, exposure, and health and safety data concerning diglycidyl resorcinol ether. OSHA regulates diglycidyl resorcinol ether under the Hazard Communication Standard and as a chemical hazard in laboratories. Regulations are summarized in Volume II, Table B-48.